

REMARKS

The above-noted amendments to claim 5 are respectfully submitted in response to the official action dated March 17, 2008. Claim 5 thus requires that the inner rotary refining member include an inner radial surface as well as an outwardly facing conical surface which is angularly disposed with respect to the inner radial surface. It also requires an outer stationary refining member which includes an inner radial surface as well as an inwardly facing conical surface which is angularly disposed with respect to that inner radial surface. These amendments are specifically disclosed and supported on page 4, paragraph [0014] and page 5, paragraph [0016], and no new matter is included therein. It is further submitted by applicant that, in view of these amendments, claims 5-10 are patentably distinguishable over the art cited by the Examiner, and reconsideration and allowance of these claims is therefore respectfully solicited.

Claims 5 and 10 have been rejected as being anticipated by Reinhall under 35 U.S.C. § 102(b). The Examiner contends that Reinhall teaches the limitations of these claims including an inner rotary refining member with an outwardly facing conical surface (12, 14) and an outer stationary refining member with inwardly facing conical surfaces (11, 13) in juxtaposition with the first refining member. These conical surfaces are said to define a refining gap therebetween, and the refining element is said to be adapted for mounting on the inwardly facing conical surface including a plurality of bars 34 and intermediate grooves 35, the bars extending along the refining gap between side walls (Fig. 3) and an upper surface forming an acute angle with at least one of the pair of side surfaces. The Examiner thus cites Fig. 3 as marked up in the office action, noting that the upper surface forms an acute angle with one side surface, and the upper surfaces form acute

angles with both pair of side surfaces. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

The Examiner has correctly pointed out that in Fig. 1 of Reinhall it can be seen that the rotary member 15 includes rotary grinding members 12 and 14, whereas the stationary member includes stationary grinding members 11 and 13 opposing rotary grinding members 12 and 14, respectively. Furthermore, the inner gap between stationary member 11 and rotary member 12 is a radial gap which extends perpendicularly from the rotary shaft. The gap between the stationary member 13 and the rotary member 14 defines inclined space 33 which is angularly disposed with respect to the radial or inner gap between stationary member 11 and rotary member 12.

As contrasted to the present invention, the inclined space 33 of Reinhall is "equipped with conventional grinding elements such as grooves and ridges as is well known to the art. . . ." (Col.4 11.43-45.) It is only within the radial grinding space 32, between grinding members 11 and 12, that teeth 34 are located, which are relied upon by the Examiner to somehow meet the remaining limitations of claim 5. Thus, there are no teeth having an upper surface forming an acute angle with any side surfaces thereof to be found in the inclined space 33 of Reinhall. Indeed, no teeth at all are actually shown in this region. They are merely referred to as the conventional bars and grooves to be used therein.

Referring to Fig. 3 as represented in the official action itself, and ignoring the fact that the teeth shown therein are not located in the inclined space between the angularly disposed inner surface and the angularly disposed outer surface of the present claims, teeth 34, which are said to be generally conical in shape, define angularly oriented gap spaces 32 between adjacent ones of these teeth.

Claim 5 specifically requires that the refining element adapted for mounting on the inwardly facing conical surface include bars and intermediate grooves in which the bars include a pair of sidewalls and an upper surface, the upper surface forming an acute angle with at least one of the pair of side surfaces.

As is referred to in Figs. 2 and 3 in the present application, the teeth or bars located on the inwardly facing conical surface hereof are required to include a front side surface 15 which forms an acute angle with respect to the upper surface 14 thereof. The bars on the outwardly facing conical surface 10 are preferably formed conventionally. Similarly, in the embodiment shown in Fig. 3 hereof, bars 12 on inwardly facing conical surface 11 include two side surfaces 15 and 16, each of which forms an acute angle with the upper surface 14 thereon. These angles of less than 90° are more specifically defined in pending claims 2-4.

Returning to Reinhall, this patent does not disclose any such teeth including the required acute angle between their upper and side surface(s), either located on the angularly disposed surfaces forming inclined outer grinding space 33 or anywhere else. Even those teeth which are shown in the inner radial space 32 thereof (see Fig. 3 of Reinhall) include an angle between the side walls of each of these conical surfaces and the upper surface which is obtuse rather than acute; i.e., it is greater than 90°. It is therefore clear that Reinhall does not anticipate either claim 5 or 10 hereof, and withdrawal of this rejection is therefore respectfully requested.

Claims 6-9 have been rejected as being unpatentable over Reinhall under 35 U.S.C. § 103(a). The Examiner admits that Reinhall does not teach the acute angle between the ranges set forth in claims 6-9 and at least one side surface including at least about one-third portion of the total height thereof.

The Examiner concludes, however, that it would be obvious to have the acute angle of the upper surface of Reinhall between the claimed angles noted above and at least one side surface having at least one-third portion of the total height of the bars for purposes of allowing simultaneous adjustment of the width of the gap spaces between the rotatable and stationary refiners. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Applicant would initially repeat all of his above-noted contentions with respect to the clear deficiencies of the Reinhall reference with respect to the presently claimed apparatus. As for claims 6-9, it is initially noted that the Examiner completely ignores the fact that the teeth or bars 34 shown in Reinhall are not contained in the space between the inwardly and outwardly facing conical surfaces of the presently claimed invention, but are in the radial portions of the Reinhall device. Secondly, the Examiner refers to the acute angle of the upper surface of Reinhall, but no such acute angle is shown in Fig. 3, or anywhere else in Reinhall for that matter. Indeed, all of the angles between the side walls and the top walls of the teeth shown in Reinhall are either 90° or greater, and none of the required acute angles are shown therein. Without disclosing the presently claimed invention, it is therefore impossible for Reinhall to overcome the problems discussed in the specification, including the fact that in devices such as these in which the centrifugal force acting on the refining material increases strongly with increasing radius by using a refining gap in the outer gap which is conical or angular as described herein. These flow conditions thus create increased wear of the bars on the outwardly located refining element, primarily on the edges of the bars, which are said to wear at least twice as fast as corresponding edges of the bar on

the inwardly located refining elements. This, in turn, causes deterioration of the quality of material being worked between the bars and increased exchange of refining elements is required. In addition, energy consumption tends to increase in such devices. This is overcome in accordance with the presently claimed invention, but not by Reinhall.

It is therefore respectfully submitted that all of the claims now set forth in this application clearly possess the requisite novelty, utility and unobviousness to warrant their immediate allowance, and such action is therefore respectfully solicited. If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional issues relating to these claims.

Finally, if there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

By 
Arnold H. Krumholz
Registration No.: 25,428
LERNER, DAVID, LITTENBERG,
KRUMHOLZ & MENTLIK, LLP
600 South Avenue West
Westfield, New Jersey 07090
(908) 654-5000
Attorney for Applicant